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D2*

walls, a channel closure sheet bonded to the walls, nozzles respectively communicating with the channels and means for supplying droplet liquid to the channels, wherein said channel closure sheet has an array of parallel conductive tracks thereon spaced at intervals corresponding with the channel spacing [and], said tracks being disposed parallel with and opposite the channels and [bonds] bonding mechanically and electrically [connect] connecting each track to [the electrodes] a respective electrode on the channel-facing walls of the channel opposite [thereto] said track and [seal] sealing the closure sheet to the channels, and wherein said means for supplying droplet liquid includes a manifold, said manifold being non-integral with said base sheet and said channel closure sheet.

REMARKS

This paper is in response to the final official action of August 13, 1998. Reconsideration is requested.

By the foregoing amendments to claims 34 and 59, those claims have been amended to improve clarity only and not to distinguish over the prior art, directly in response to the indefiniteness rejections under 35 U.S.C. § 112, second paragraph.

In each of claims 34 and 59, it is recited that the layer of piezoelectric material is poled normal to the base sheet, as disclosed in the specification and illustrated in Figs. 2 and 3. Further, it is recited

that the channel-separating walls define opposed channel facing surfaces, and that adjacent parallel channels are spaced apart from each other by a channel spacing. Further, as amended, the claims recite that a channel closure sheet has an array of parallel conductive tracks thereon spaced at intervals corresponding with the channel spacing, the tracks being disposed parallel with and opposite the channels and bonding mechanically and electrically connecting the tracks to the electrodes on the channel-facing walls opposite the tracks, and sealing the closure sheet to the channels.

It is submitted that the amendments to independent claims 34 and 59 are supported by the description and the original claims themselves.

Reconsideration and withdrawal of the indefiniteness rejections of claims 34-45 and 59-64 in view of the foregoing amendments are respectfully solicited.

The obviousness rejection of claims 34-45, 59-64, 67-69, 72, and 73 based on Temple '028 in view of Bartky et al. is respectfully traversed. Reconsideration is requested.

Common to all rejected claims is the feature of mechanical bonds between conductive tracks on a cover sheet and electrodes on channel-facing walls, which bonds seal the closure sheet to the channels. This feature is not shown or suggested by either of the two cited documents.

Temple '028 discloses (see Figs. 1-3) a high-density, multi-channel array in which the facing walls 16 of channels 12 include metallized electrodes 34 which extend from the edges of the tops 22 of the walls down to a location well short of the bottom surface 18 of the channels (see col 4, lines 6-10). Attachment of the closure sheet 21, however, is achieved by means of a bonding layer 21 between the sheet and the tops 22 of the channel walls 16 (see col. 3, lines 16-20).

Bartky discloses (see Fig. 9(a)) a multi-channel array which is manufactured by first laminating pre-poled layers of piezoelectric ceramic to base and top walls 601 and 602 (see col. 9, lines 31-33). The resulting laminates are then each formed with parallel grooves to define respective upper and lower wall parts 605 and 607 (see col. 9, lines 35-38), the surfaces of which are then coated with electrodes (see col. 9, lines 41-42). Channel formation, however, is achieved by cementing the laminates together at their wall parts 605 and 607 (see col. 9, lines 44-45).

Neither Temple '028 nor Bartky suggests the feature of mechanical bonds between conductive tracks and channel electrodes which seal a closure sheet to the channels nor the various advantages derivable therefrom as detailed in the present specification.

For the foregoing reasons reconsideration and withdrawal of the obviousness rejection is solicited.

Entry of the foregoing amendments after final rejection is believed to be proper, and is solicited, since the amendments are made directly in response to the indefiniteness rejections raised in the final action. Further, entry of the amendments in order to improve the form of the claims for consideration on appeal is solicited.

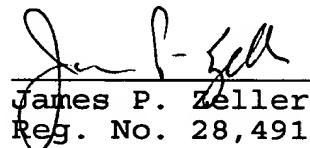
Should the examiner wish to discuss the foregoing or any matter of form or procedure in attempt to advance this application toward allowance, he is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

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By

  
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